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Dermatology inpatient care in the UK: rarely possible, hard to defend but occasionally essential.

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It is generally accepted that admission into hospital is an experience best avoided avoided unless absolutely essential. As dermatologists, we pride ourselves on aspiring to and delivering the best evidence-based care for our patients with skin disease. What is the evidence to justify in-patient care for patients with skin disease? The background for this debate in the UK, and in most advanced heath care systems, is that admission into hospital for the management of severe skin diseases has been squeezed year-on-year by reductions in dermatology beds. Additionally, the need for in-patient care in dermatology has reduced dramatically with the introduction of newer, more effective treatments [1]. The current reality for in-patient care for patients with skin disease in the NHS is far from ideal: usually remote from the dermatology team, patients can end up on any ward, surrounded by sick and elderly patients, and cared for by non-dermatology nurses.

Over 70 years ago, Richard Asher pointed out the "dangers of going to bed", arguing that we should do all we can to avoid or shorten hospital admission[2]. More recently, the Kings Fund report on *Avoiding hospital admissions; what does the research evidence say?* analysed issues around emergency admissions with a focus on evidence for prevention[3]. As dermatologists reading this report, we found it helpful; it describes the bigger picture of in-patient care in the NHS. But what does this report say about avoiding in-patient care for patients with skin disease? There is nothing specific, but plenty for dermatologists to think about. For example, the report asks which admissions are avoidable, and then highlights "ambulatory or primary-care-sensitive conditions". Most dermatology admissions in the past were patients who would have fitted this criterion. The report goes on to describe patient-self-management as a key element of avoiding hospital admission; although focused on asthma and COPD, it is just as relevant to patients with psoriasis and eczema. The report takes it as a given that in-patient care concerns patients for whom other options have run out and admission is essential. We found no research papers from the UK on avoiding hospital admission for patients with skin disease.

In this era of evidence-based medicine, what evidence relates to in-patient care for patients with skin disease in the UK? We searched the literature and found very little. There are no systematic reviews or clinical guidelines on this topic; these require evidence, and research papers in this subject area are sparse. A study from the UK in 1995 confirmed that inpatient care greatly improved patient's quality of life, but lacked data to explain why in-patient care was needed for 230 patients over a six month period[4]. In 1999, Munro reported that only 18% of 300 dermatology patients admitted to hospital in Scotland would have required admission to a medical or surgical ward [5]. A more recent UK study on in-patient care for psoriasis revealed an average length of stay of 19.7 days, aiming to act as a benchmark for other units[6], but made no attempt to justify or defend in-patient care for psoriasis or to consider alternatives. More recently, analysis of children with dermatological conditions admitted to paediatric intensive care beds revealed skin infections, including cellulitis and necrotizing fasciitis, as the most frequent cause for admission; in 28% of cases, the dermatological diagnosis was considered the primary reason for admission [6]. In the USA a total of 1.8% of hospital admissions for the years 2005 through 2011 were for adult patients with a

skin infection as the primary diagnosis [7]. Conspicuous by its absence is any health economic or qualitative research on dermatology admissions. Inpatient care may improve patient's quality of life[9], but is extremely expensive. Furthermore, most people with skin disease prefer to avoid admission if possible.

What are the alternatives to hospital admission in the NHS for those with bad skin disease?
The changing environment of hospitals in the UK's NHS has forced most dermatologists to work differently; admitting patients for in-patient care is usually no longer possible nor desirable. Alternatives include day-care, phototherapies, systemic and biological therapies, hostel or hotel accommodation when attending a regional or national unit for two days or more, and care at home. As for phototherapy, day care must be locally accessible and convenient to be acceptable to patients. The usage of conventional systemic and biological therapies has risen dramatically at the same time as the dermatology beds have disappeared [1]. Research has demonstrated that for psoriasis, patient flow towards systemic therapies and biologics is high in heath care systems where day care and phototherapy are poorly resourced or inaccessible [10]. Care at home has been little studied in dermatology, with the exception of home phototherapy for psoriasis where equal efficacy and safety to hospital-based phototherapy has been demonstrated; home phototherapy was preferred by the patients in this study [11]. The management of lower limb cellulitis has seen a UK-wide change in clinical practice with patient care shifted from hospital to home [12]. Finally, a recent report of successful care at home for severe exfoliative pityriasis rubra pilaris (PRP) suggests that alternative models of care can further reduce the need for in-patient care even for disorders such as PRP [13]. Both of these last two examples of care shifting from hospital to the home required a high degree of integration between primary and secondary care services [12, 13].

Which patients with skin disease still require in-patient care? The short answer is those who are non-ambulatory; patients with such severe skin disease, with or without systemic problems, that intensive round the clock nursing and medical care is essential. Examples include: toxic epidermal necrolysis; severe erythema multiforme/Stevens Johnson syndrome; extensive pemphigus vulgaris or bullous pemphigoid; skin failure due to end-stage T-cell lymphoma; patients with severe genetic skin disease such as epidermolysis bullosa; younger patients with multi-system disease. These examples are easy to agree upon due to their severity and their impact on the patient who can no longer care for themselves. Other examples where in-patient care may also be needed include: elderly patients with multi-system disease that also includes skin disease; patients with severe vascular disease of the lower limbs with leg ulcers that fail to heal; patients with severe psoriasis or severe eczema who have failed on biological therapies and cannot care for themselves at home; patients with severe skin or subcutaneous infection. In view of this continuing need for inpatient care, appropriate provision for this must be included when commissioning dermatology care.

Thus, there are a number of categories where in-patient care for skin disease is still important. [14, 15] What is the best model of care for these patients (Fig 1)? Elderly and infirm patients with multiple problems are best cared for on a specialist ward for care of the elderly, with a visiting dermatology team including regular care from visiting dermatology specialist nurses. Similarly, some younger adults with multiple co-morbidities may be most effectively managed on a general medical ward, with a visiting dermatology team. Cultural influences and factors other than disease severity alone may play a role in admission [16]. There may also be geographic reasons leading to admission: the use of hostel or "hotel" beds may overcome some of these practical constraints. There is an argument that patients with some very rare conditions should be cared for in specialised units, such as plastic surgery burns units for toxic epidermal necrolysis (TEN), the TEN service in Creteuil, France [17], or the epidermolysis bullosa UK in-patient facilities in Birmingham and London [18]. Patients with skin failure due to end-stage T-cell lymphoma of the skin are best cared for at home or hospice, with skilled end-of-life palliative care nurses as part of the care team [19]. Patients with severe vascular disease of the

legs and recalcitrant leg ulcers are best cared for by vascular surgical teams, with advice on skin care from a visiting dermatology team [20]. Children and adults with severe skin infection are best managed on intensive care units or an acute medical ward, with input from a visiting dermatology team [6,7, 12].

In conclusion, we need evidence-based decisions concerning the pattern of future dermatology in-patient care, informed by patient needs and preferences. UK Dermatologists must now take the lead by negotiating for high quality, accessible outpatient and day-treatment facilities to replace the lost dermatology wards. For this to succeed, high levels of integration between secondary and primary care services are needed [3], with a greater emphasis on placing our patients at the centre of their own health care and facilitating their self-management [21]. There is now an urgent need for qualitative and health economic research to ensure that future provision and organisation of inpatient services are optimised for our patients.

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Figure 1.

Skin conditions where patients may require in-patient care, and the teams that care for them in today's NHS

Condition	Clinical teams
Toxic epidermal necrolysis	Specialised burns team and dermatology team
Severe erythema multiforme/SJS	Specialised burns team and dermatology team
Severe pemphigus vulgaris or severe bullous pemphigoid	Medical team on a high dependency unit; rarely anaesthetics team on intensive care unit and dermatology team
Skin failure in end-stage T-cell lymphoma of skin	Palliative care services/ Care at home and dermatology team
Severe, congenital skin diseases such as epidermolysis bullosa	Local dermatology team in collaboration with national specialist centres
Patients with multi-system auto-immune disorders	Rheumatology team in specialised regional unit or local physicians on a local medical ward and dermatology team
Elderly frail patients with multiple co-morbidities, including skin disease	Care of the elderly team and dermatology team
Patients with severe lower-limb vascular disease and leg ulcers	Vascular surgeons and dermatology team
Severe skin infection	Intensive care/general medical team and dermatology team